

WHAT IS CLAIMED IS:

1. A method for cleaning a process chamber for semiconductor and/or flat panel display manufacturing,

5 comprising the steps of:

converting a feed gas to a cleaning gas in a remote location, wherein said feed gas does not clean the process chamber; and

delivering said cleaning gas to the process chamber.

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2. The method of claim 1, further comprising the step of:

activating said cleaning gas outside the chamber prior to delivering said cleaning gas to the process chamber.

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3. The method of claim 2, wherein said step of activating is performed through a means selected from the group consisting of a remote plasma source, a heat source, and an electrical source.

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4. The method of claim 3, wherein said remote plasma source is selected from the group consisting of a microwave energy source and a radiofrequency energy source.

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5. The method of claim 1, wherein said feed gas is HF.

6. The method of claim 5, wherein the cleaning gas is F.sub.2.

7. The method of claim 6, wherein the conversion is done by electrolysis.

8. A method for cleaning a process chamber for semiconductor and/or flat panel display manufacturing, comprising the steps of:

converting a feed gas to a cleaning gas in a remote location, wherein the resulting gas is a mixture of the feed gas and the cleaning gas;

transferring the resulting gas mixture to a cold trap, wherein the feed gas is converted into a liquid form, and the cleaning gas remains in a gaseous form; and

delivering said cleaning gas to the process chamber.

9. The method of claim 8, prior to said step of delivering the cleaning gas to the process chamber, further comprising the step of:

pumping the cleaning gas into a storage unit.

10. The method of claim 9, after the step of pumping the cleaning gas into a storage unit, further comprising the step of:

5 activating the cleaning gas outside the chamber before delivering the cleaning gas to the chamber.

10 11. The method of claim 10, wherein said step of activating is performed through a means selected from the group consisting of a remote plasma source, a heat source, and an electrical source.

15 12. The method of claim 11, wherein said remote plasma source is selected from the group consisting of a microwave energy source and a radiofrequency energy source.

20 13. The method of claim 8, wherein said feed gas is HF.

25 14. The method of claim 13, wherein the cleaning gas is F.sub.2.

 15. The method of claim 14, wherein the conversion is done by electrolysis.